

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) An electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer, or a combination of these aliphatic acids; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel is electroactive in the absence of contact with electrodes and at a pH range of from about 3 to about 10.

2. (Original) The electroactive hydrogel composition of claim 1 wherein the unsaturated aliphatic acid is present in an amount of about 65 wt.%, of the total composition.

3. (Currently Amended) The electroactive hydrogel composition of claim 2 wherein the unsaturated aliphatic acid is ~~most preferably~~ acrylic acid, maleic acid, glutaric acid, or a mixture thereof.

4. (Original) The electroactive hydrogel composition of claim 3 wherein the conductive polymer is a polypyrrole-carbon black composite.

5. (Original) The electroactive hydrogel composition of claim 4 wherein the polypyrrole-carbon black composite is present in an amount of about 4 wt.% of the total composition.

6. (Original) The electroactive hydrogel composition of claim 1 wherein the hydrogel comprises about 65 wt.% acrylic acid.

7. (Original) The electroactive hydrogel composition of claim 6 wherein the hydrogel comprises about 4 wt.% polypyrrole/carbon black.

8. (Cancelled).

9. (Original) The electroactive hydrogel composition of claim 1 further comprising a therapeutic, prophylactic or diagnostic agent.

10. (Original) A drug delivery device for controlled delivery of a therapeutic, prophylactic agent or diagnostic agent to an animal comprising an electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel composition is electroactive over a pH range of from about pH 3 to about pH 10, in the absence of contact with electrodes, and in the presence of an electric energy source of from about 1 to about 5 V.

11. (Original) The drug delivery device of claim 10 wherein said device is implantable.

12. (Original) The drug delivery device of claim 11 wherein the device is a microvalve.

13. (Original) The drug delivery device of claim 12 wherein the device further comprises at least one reservoir containing the therapeutic, prophylactic or diagnostic agent, and wherein application of an electric current to the device causes the microvalve to intermittently release the therapeutic, prophylactic or diagnostic agent from the reservoir.

14. (Currently Amended) The drug delivery device of claim 10 wherein the unsaturated aliphatic acid comprises preferably about 65 wt.% acrylic acid.

15. (Currently Amended) The drug delivery device of claim 14 wherein the hydrogel composition comprises preferably about 4 wt.% polypyrrole-carbon black.

16. (Cancelled).

17. (Original) The drug delivery device of claim 9 wherein the device is implantable.

18. (Cancelled).

19. (Original) A method for delivering a therapeutic, prophylactic or diagnostic agent to a patient comprising

(a) applying on or implanting in the patient a drug delivery device comprising an electroactive hydrogel comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; at least one cross-linking agent; and a therapeutic, prophylactic or diagnostic agent; and

(b) activating the delivery device by applying a current of 40 mA or less, wherein electroactuation of the hydrogel results in release of the therapeutic agent, prophylactic agent or diagnostic agent from the drug delivery device.

20. (Original) The method of claim 19 wherein the electric field is applied at a predetermined cycle of positive and negative voltage.